

(b) acquiring absorption, transmittance or reflectance spectral raw data of a plant embryo or any portion thereof from a plant embryo of unknown embryo quality; and

(c) applying the developed classification model to the spectral raw data of step (b) in order to classify the quality of the plant embryo of unknown embryo quality.

28. (Amended) A method according to Claim 27, wherein the absorption, transmittance or reflectance spectral raw data acquired in step (a)(i) is preprocessed using one or more preprocessing algorithms before step (a)(ii); the absorption, transmittance or reflectance spectral raw data acquired in step (b) is preprocessed using one or more preprocessing algorithms; and step (c) is carried out using the preprocessed absorption, transmittance or reflectance spectral raw data.

29. (Amended) A method according to Claim 28, wherein the preprocessing algorithm reduces noise and adjusts for drift and diffuse light scatter.

30. (Amended) A method according to Claim 28, wherein the preprocessing algorithm reduces the amount of absorption, transmittance or reflectance spectral raw data yet retains substantially all of the spectral information.

31. (Amended) A method according to Claim 28, wherein the preprocessing algorithm calculates metrics.

32. (Amended) A method according to Claim 27, wherein the absorption, transmittance or reflectance spectral raw data is acquired from more than one view of the plant embryo or portion thereof.

33. (Amended) A method according to Claim 27, wherein the absorption, transmittance or reflectance spectral raw data is acquired from one or more embryo regions selected from the group consisting of cotyledon, hypocotyl and radicle.

34. (Amended) A method according to Claim 27, wherein the plant embryo quality is morphology.

35. (Amended) A method according to Claim 27, wherein the plant embryo quality is embryo conversion potential.

36. (Amended) A method according to Claim 27, wherein the plant embryo is a plant somatic embryo.

37. (Amended) A method according to Claim 27, wherein the plant is a tree.

38. (Amended) A method according to Claim 37, wherein the tree is a member of the order *Coniferales*.

39. (Amended) A method according to Claim 37, wherein the tree is a member of the family *Pinaceae*.

40. (Amended) A method according to Claim 37, wherein the tree is selected from the group consisting of genera *Pseudotsuga* and *Pinus*.

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